Corsair SF750 Platinum

Serial Number 18414866000067140032

Lab ID 550

Certification ID 25550

Test Result Report ID:

Certificate Issue Date: Nov 27, 2018

Scheme: ETA-EMI PSU

115V



230V



115V



230V



Scheme: LAMBDA PSU



Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information
(Non-accredited measurements)

Product Identification Details	
Brand	Corsair
Model	SF750 Platinum
OEM/ODM	Great Wall
Serial Number	18414866000067140032
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5

Rated Frequency (Hz)	47-63
Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Rifle Bearing Fan (NR092L)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	550
Date of receipt	Nov 19, 2018
Testing Date	Nov 25, 2018
Report Issued Date	Nov 27, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors
(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300mm)	1	1	16-18AWG	No
4+4 pin EPS12V (400mm)	2	2	16AWG	No
6+2 pin PCIe (400mm+100mm)	2	4	16AWG	No
SATA (100mm+120mm+120mm120mm)	2	8	18AWG	No
4 pin Molex (100mm+120mm+120mm)	1	3	18AWG	No

AC Power Cord (1380mm) - C13 coupler	1	1	16AWG	-	

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	2.5	0.3
	Watts	130		750	12.5	3.6
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Great Wall
Model Number	RPS0115
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 3x CM chokes, 1x MOV, 1x CMD02X
Inrush Protection	NTC Thermistor & Diode
Bridge Rectifier(s)	1x
APFC MOSFET	Infineon IPZ60R060C7 (650V, 22A @ 100°C, 0.06Ohm)
APFC Boost Diode	ROHM SCS306AP (650V, 6A @ 135°C)
Hold-up Cap	Nippon Chemi-Con (420V, 470uF, 2000h @ 105°C, KMZ)
Main Switchers	2x 60F2094 (600V, 15.8A @ 150°C, 0.19Ohm) Driver IC: Silicon Labs Si8230BD
Quasi-Resonant Contoller	Infineon 5QR1680AG
APFC Controller	Champion CM6502UHHX & CM03AX Green PFC controller
Resonant & PWM Controller	Champion CM6901X
Quasi-Resonant Contoller	Infineon 5QR1680AG
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x APower 4N1R8C-A (45V, 32A @ 70C, 1.8mOhm)
5V & 3.3V	DC-DC Converters: 4x Infineon PSMN2R0-30YLE (30V, 100A @ 100°C, 2.8mOhm @ 100°C) PWM Controller: APW7159C

Filtering Capacitors	Electrolytics: 1x Nippon Chemi-Con (4-10,000 @ 105°C, KY), 2x Rubycon (3-6,000 @ 105°C, YXG) Polymers: Nippon Chemi-Con (G61B, G8, G84R, G84G, G85F), 6x Nichicon (LG)
Supervisor IC	Infinno IN1S429i-SCG
Fan Controller	PIC16F1824
Fan Model	Corsair NR092L (92mm, 12V, 0.22A, 3950 RPM, Rifle Bearing)
5VSB Circuit	
Rectifier	1x CSD18534 (60V, 13A @ 25°C, 9.8mOhm)
Step-Down Converter	Texas Instruments TPS54231 (3.5V-28V Input, 2A)

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.210%
Average Noise Output (>1450 Load Combinations)	26.20dBA
Average PF (>1450 Load Combinations)	0.981
Efficiency With 10W (≤500W) or 2% (>500W) Load	54.190%
Standby Power Consumption	0.0477W
Non-Accredited	
12V Ripple (Full Load)	29.54mV
5V Ripple (Full Load)	20.21mV
3.3V Ripple (Full Load)	16.74mV
5VSB Ripple (Full Load)	20.90mV
12V Load Regulation	0.11%

5V Load Regulation	0.24%
3.3V Load Regulation	0.45%
5VSB Load Regulation	1.27%
Inrush Current	28.322A

230V

Accredited		
Average Efficiency (>1450 load combinations)	92.083%	
Average Noise Output (>1450 Load Combinations)	25.45dBA	
Average PF (>1450 Load Combinations)	0.950	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0747W	
Non-Accredited		
12V Ripple (Full Load)	29.54mV	
5V Ripple (Full Load)	20.21mV	
3.3V Ripple (Full Load)	16.74mV	
5VSB Ripple (Full Load)	20.90mV	
12V Load Regulation	0.12%	
5V Load Regulation	0.24%	
3.3V Load Regulation	0.45%	
5VSB Load Regulation	1.25%	
Inrush Current	79.115A	
Hold-Up Time & PWR_OK Signal	11.60ms	
AC Loss to PWR_OK Hold Up Time	8.80ms	
PWR_OK Inactive to DC Loss Delay	2.80ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

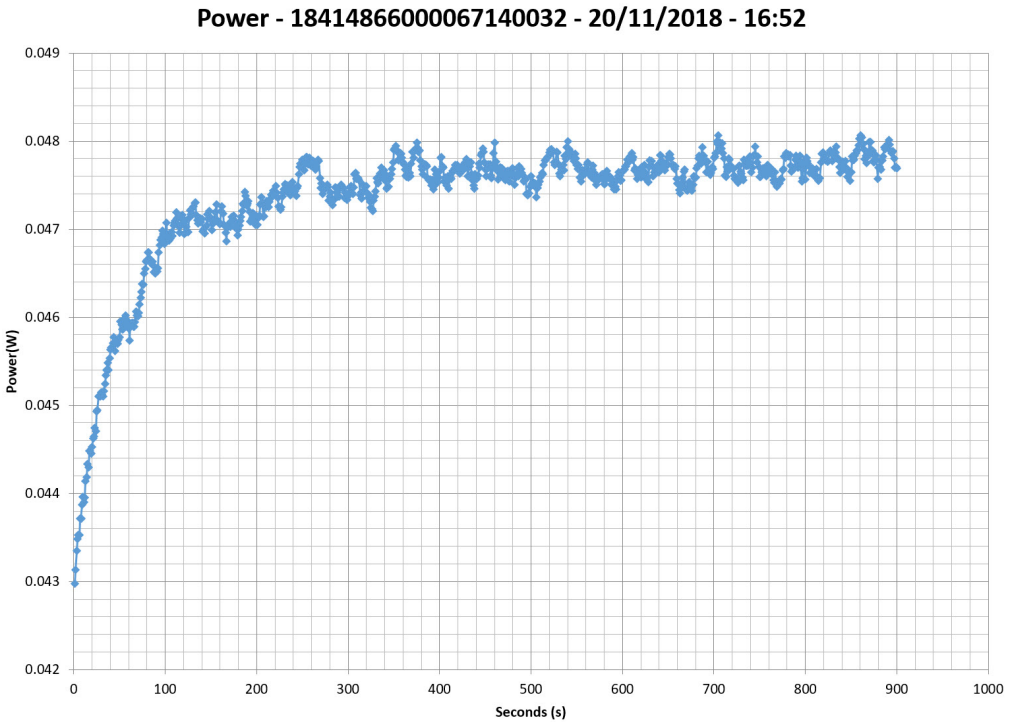
Hold-Up Time (ms)	11.60
AC Loss to PWR_OK Hold Up Time (ms)	8.80

PWR_OK Inactive to DC Loss Delay (ms)	2.80

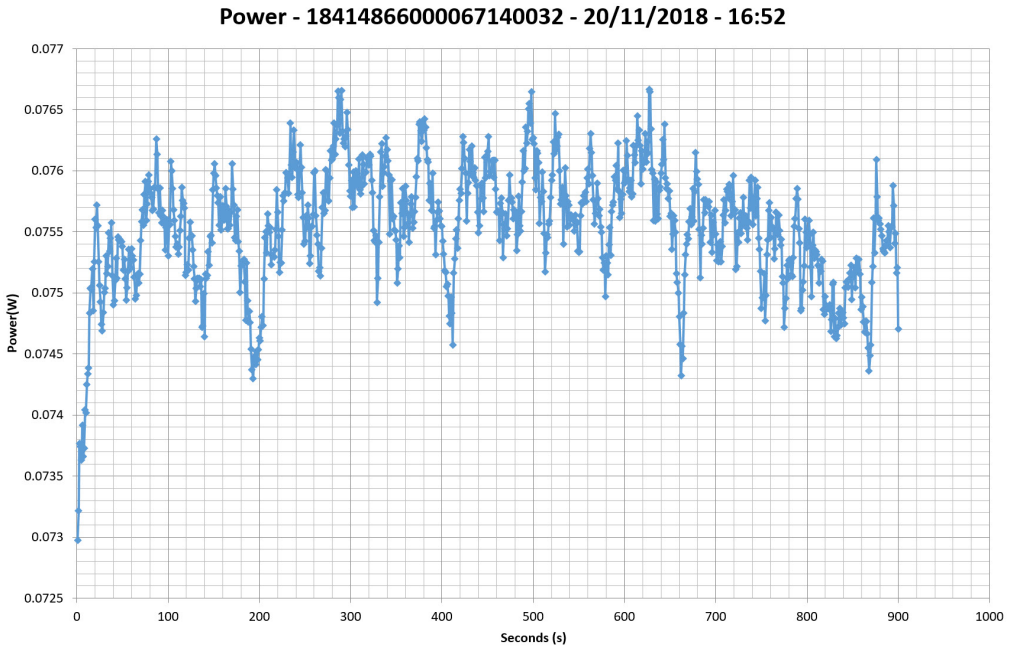
Stromverbrauch im Ruhezustand

Graphs

115V

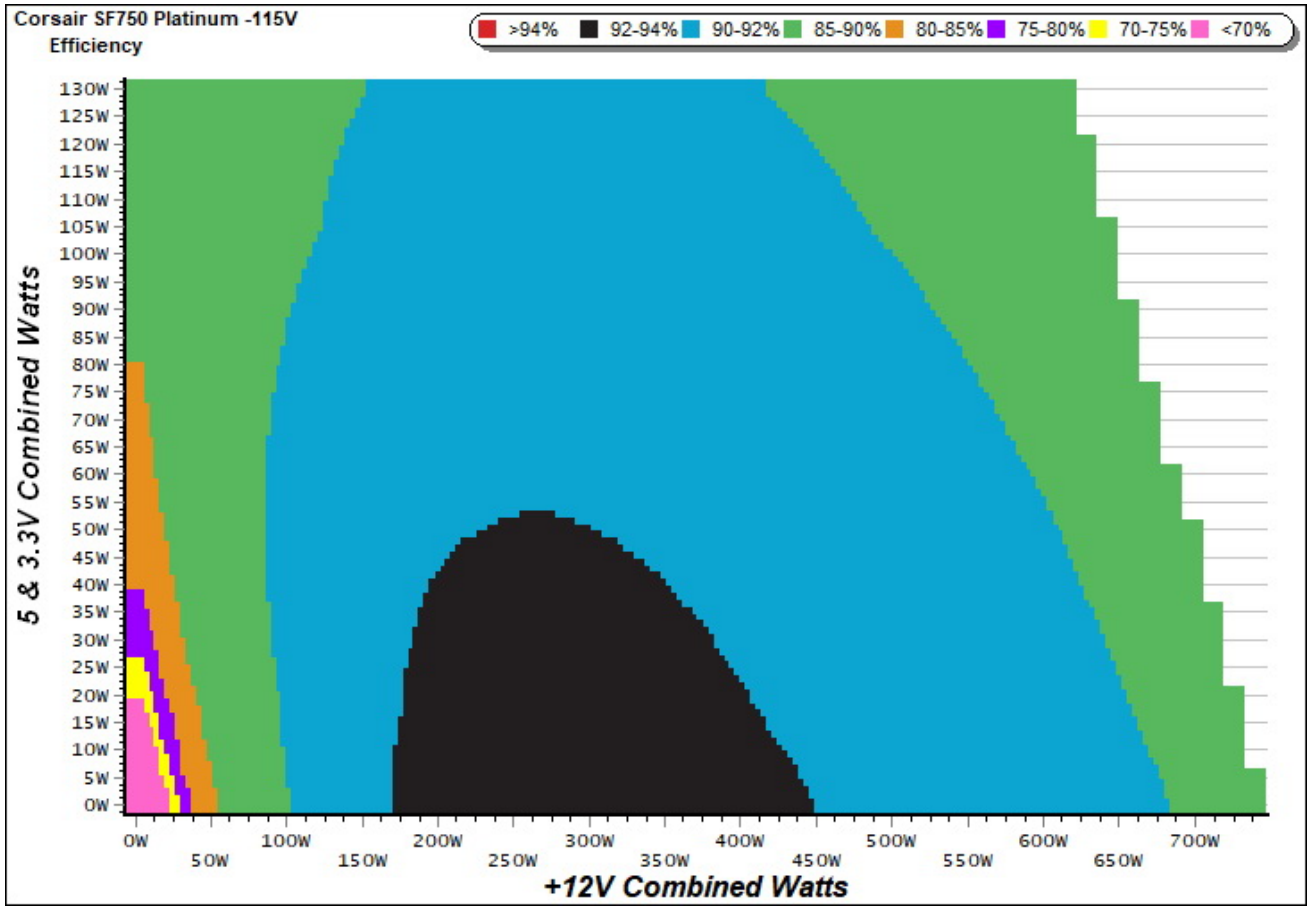


230V



Efficiency Graph

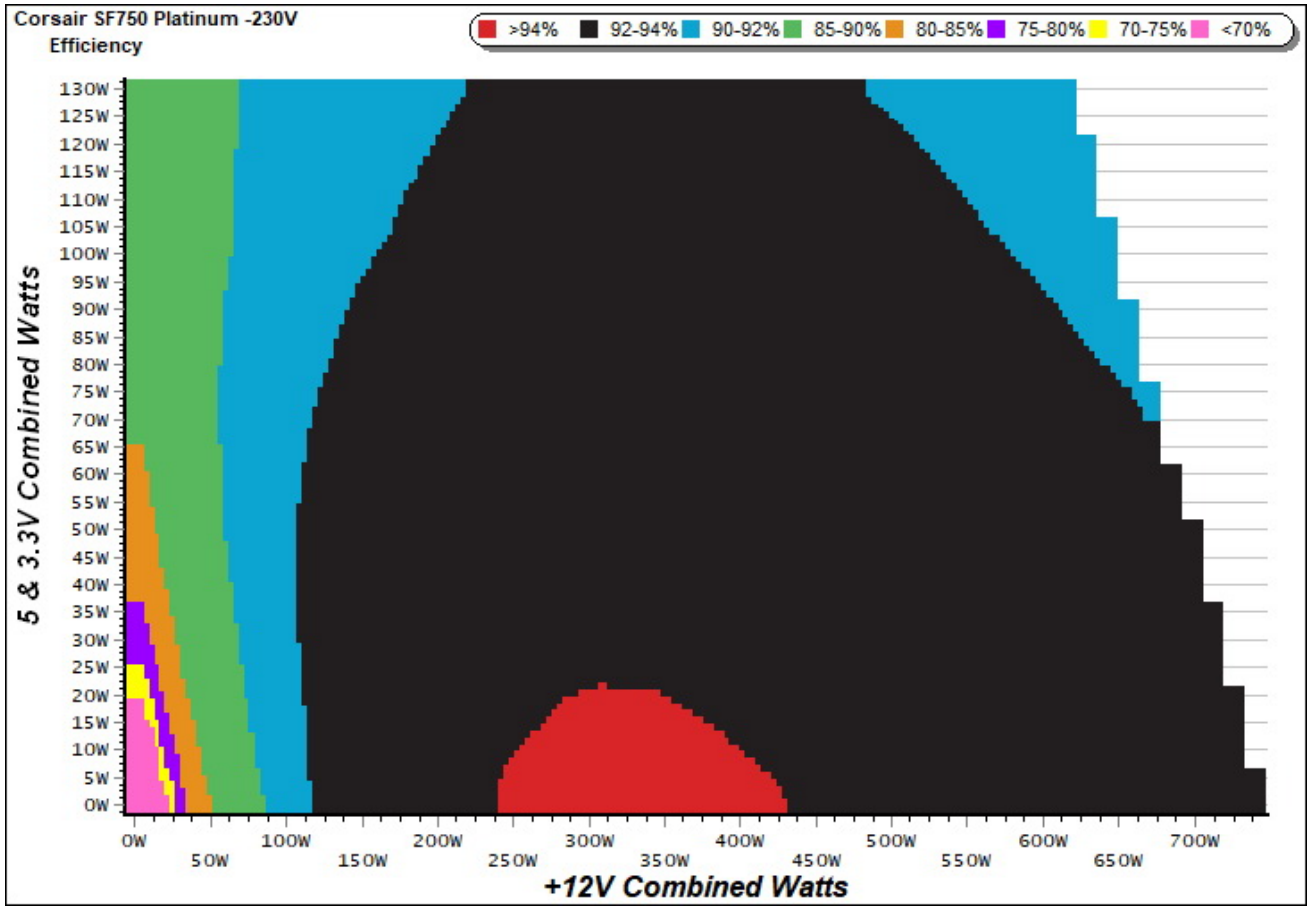
115V



INFO

This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations.

230V

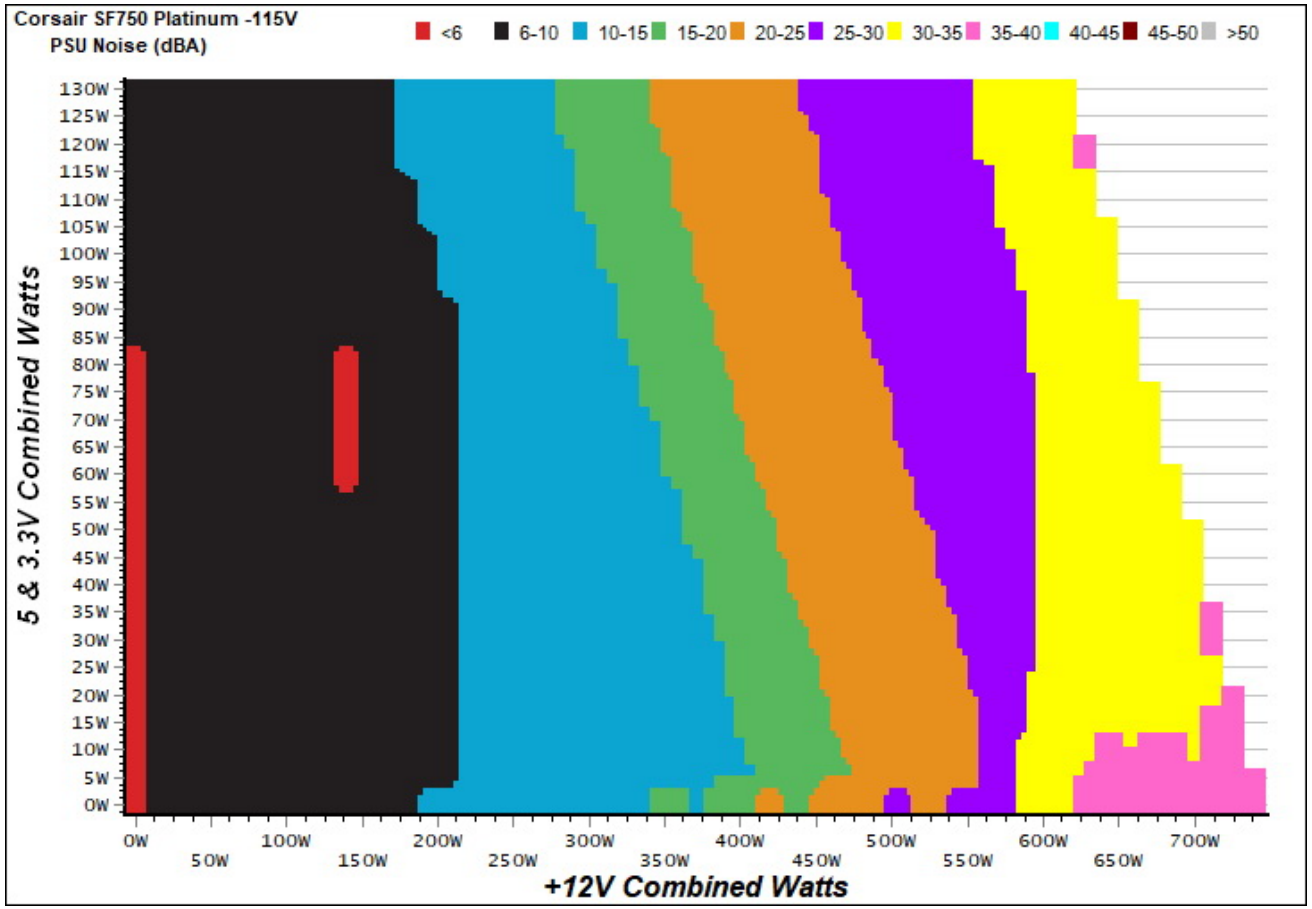


INFO

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Noise Graph

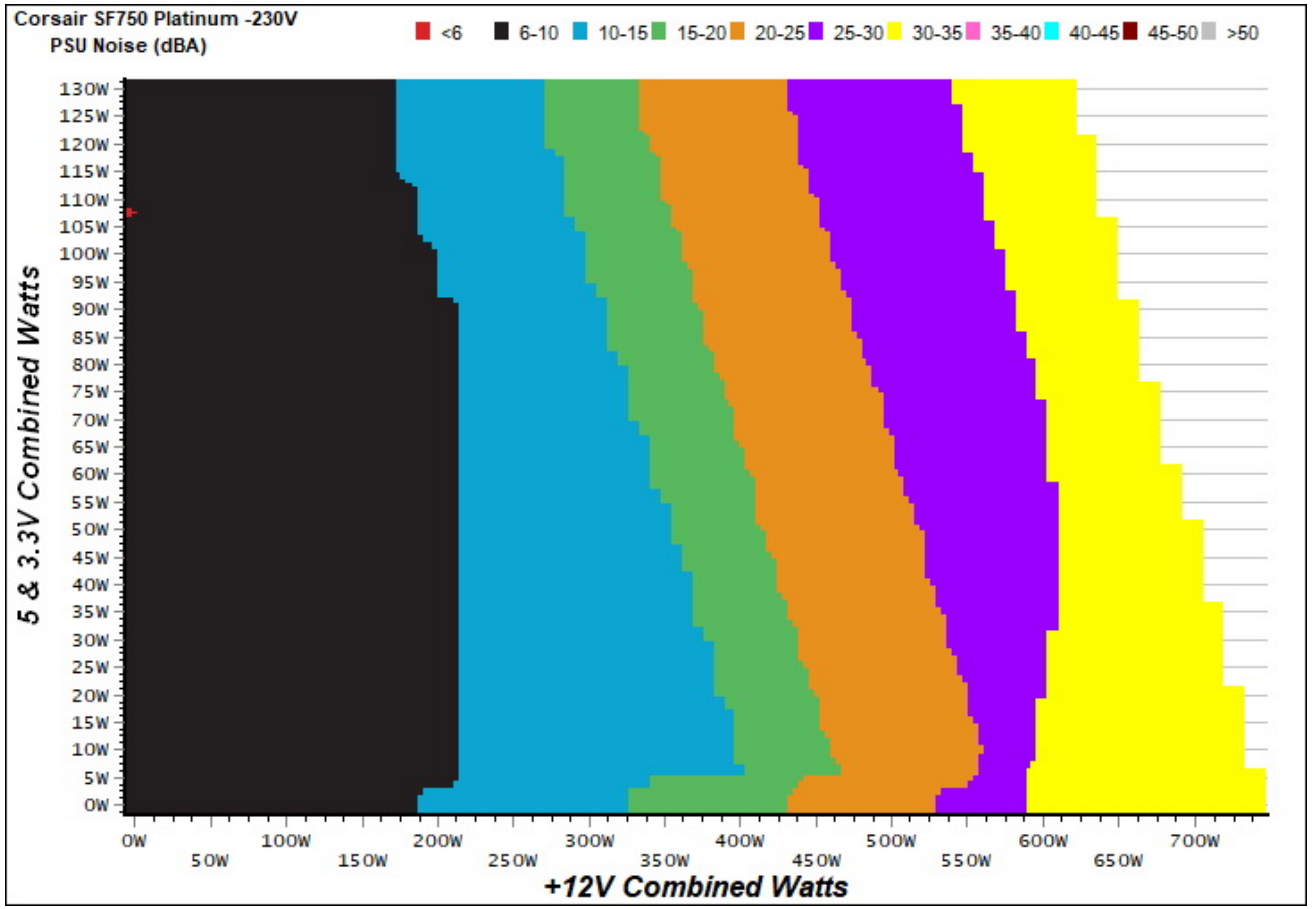
115V



INFO

The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

230V

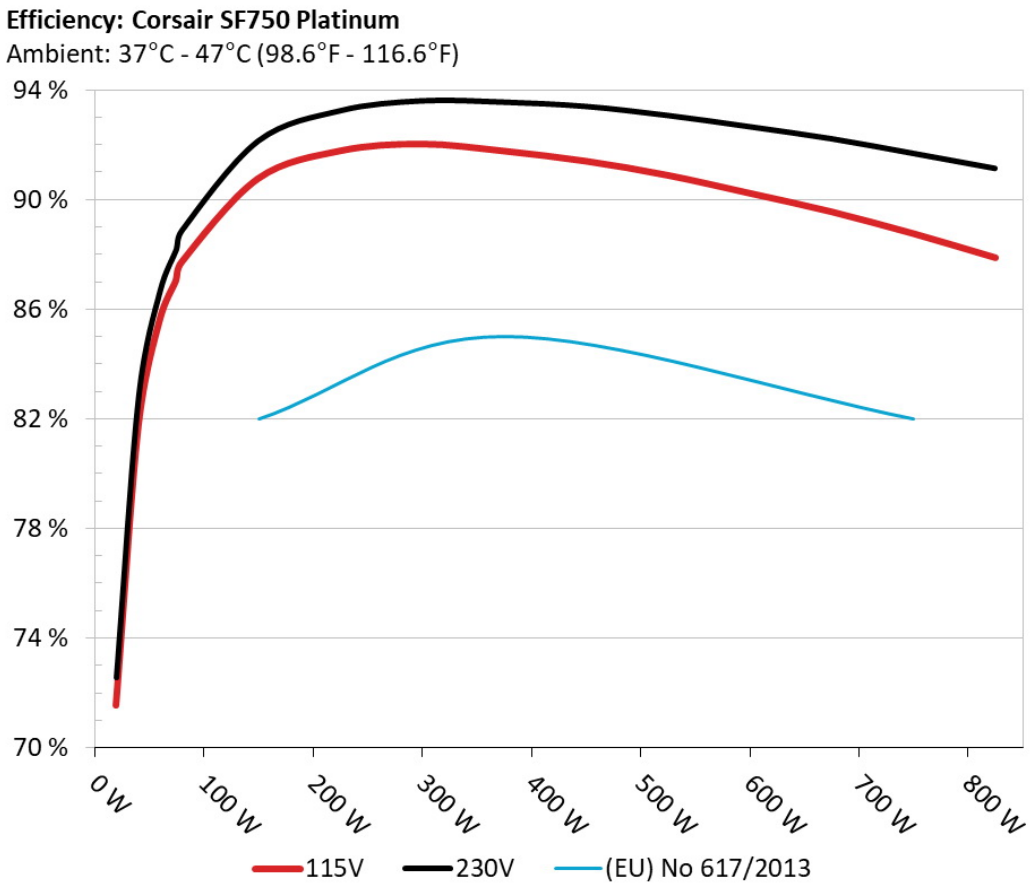


INFO

The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

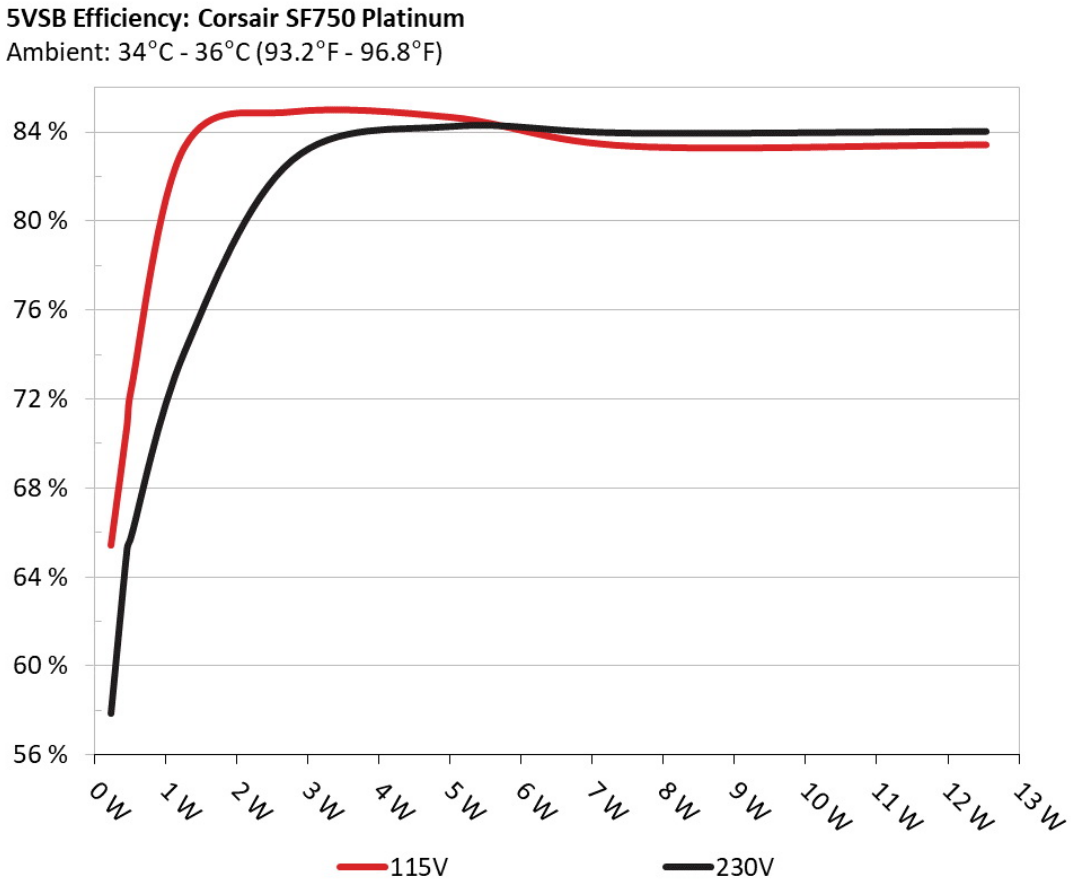
Efficiency under high ambient temperature



INFO

The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used.

5VSB Efficiency



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input.

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	65.418%	0.049
	5.045V	0.347		115.06V
2	0.090A	0.455	70.872%	0.088
	5.044V	0.642		115.06V
3	0.550A	2.772	84.926%	0.304
	5.038V	3.264		115.06V
4	1.000A	5.033	84.674%	0.387
	5.033V	5.944		115.06V
5	1.500A	7.540	83.379%	0.432
	5.026V	9.043		115.07V
6	2.500A	12.535	83.439%	0.472
	5.013V	15.023		115.06V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	57.868%	0.017
	5.045V	0.394		230.03V
2	0.090A	0.455	65.280%	0.030
	5.044V	0.697		230.21V
3	0.550A	2.772	82.746%	0.132
	5.038V	3.350		230.20V
4	1.000A	5.033	84.277%	0.208
	5.032V	5.972		230.21V
5	1.500A	7.540	83.974%	0.269
	5.026V	8.979		230.21V
6	2.500A	12.534	84.047%	0.338
	5.013V	14.913		230.21V

Supplementary Tests (For Reference)

Typical Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.387A	1.973A	1.961A	0.994A	74.402	87.060%	0	<6.0	40.36°C	0.941
	12.038V	5.069V	3.361V	5.029V	85.461				46.52°C	115.05V
2	9.839A	2.959A	2.947A	1.195A	149.290	90.769%	0	<6.0	40.67°C	0.965
	12.033V	5.067V	3.360V	5.023V	164.473				47.57°C	115.04V
3	15.693A	3.454A	3.424A	1.395A	224.798	91.788%	0	<6.0	41.48°C	0.973
	12.031V	5.066V	3.358V	5.017V	244.911				49.44°C	115.04V
4	21.482A	3.948A	3.933A	1.596A	299.577	92.039%	0	<6.0	41.93°C	0.980
	12.028V	5.064V	3.356V	5.012V	325.488				50.47°C	115.04V
5	26.935A	4.938A	4.915A	1.799A	374.556	91.783%	1363	13.2	42.23°C	0.985
	12.031V	5.064V	3.355V	5.005V	408.090				52.15°C	115.05V
6	32.388A	5.927A	5.901A	2.001A	449.464	91.415%	1516	18.1	42.84°C	0.989
	12.031V	5.063V	3.354V	4.999V	491.674				53.78°C	115.04V
7	37.878A	6.917A	6.893A	2.204A	524.787	90.898%	2033	27.5	43.44°C	0.991
	12.030V	5.061V	3.352V	4.992V	577.337				54.73°C	115.04V
8	43.375A	7.906A	7.880A	2.407A	600.118	90.240%	2691	35.2	43.70°C	0.992
	12.028V	5.060V	3.350V	4.986V	665.024				56.06°C	115.04V
9	49.237A	8.404A	8.362A	2.409A	674.640	89.567%	3210	40.0	44.59°C	0.993
	12.026V	5.059V	3.348V	4.983V	753.228				58.12°C	115.04V
10	55.100A	8.901A	8.875A	2.511A	749.785	88.769%	3723	44.3	45.98°C	0.994
	12.025V	5.057V	3.346V	4.978V	844.649				60.26°C	115.03V
11	61.359A	8.903A	8.881A	2.513A	825.003	87.888%	3879	44.7	46.74°C	0.995
	12.024V	5.056V	3.345V	4.975V	938.701				62.50°C	115.03V
CL1	0.141A	16.005A	16.000A	0.000A	136.603	85.739%	1744	21.9	42.00°C	0.965
	12.043V	5.067V	3.363V	5.032V	159.324				52.82°C	115.06V

CL2	62.514A	1.000A	1.000A	1.000A	765.140	89.163%	3678	43.8	45.16°C	0.994
	12.025V	5.060V	3.346V	5.003V	858.132				60.64°C	115.03V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.387A	1.973A	1.962A	0.994A	74.410	88.198%	0	<6.0	39.72°C	0.835
	12.039V	5.069V	3.361V	5.029V	84.367				46.23°C	230.20V
2	9.840A	2.960A	2.946A	1.195A	149.302	92.153%	0	<6.0	40.82°C	0.913
	12.033V	5.067V	3.359V	5.023V	162.015				48.13°C	230.20V
3	15.694A	3.454A	3.422A	1.395A	224.802	93.264%	0	<6.0	41.33°C	0.941
	12.031V	5.066V	3.358V	5.017V	241.039				50.14°C	230.20V
4	21.481A	3.949A	3.932A	1.597A	299.594	93.625%	0	<6.0	41.85°C	0.954
	12.029V	5.065V	3.356V	5.011V	319.992				51.59°C	230.20V
5	26.935A	4.939A	4.917A	1.798A	374.508	93.574%	1363	13.2	42.15°C	0.963
	12.029V	5.064V	3.355V	5.005V	400.226				52.45°C	230.20V
6	32.398A	5.926A	5.905A	2.001A	449.388	93.421%	1510	18.1	42.63°C	0.968
	12.025V	5.062V	3.353V	5.000V	481.037				54.22°C	230.20V
7	37.885A	6.918A	6.891A	2.204A	524.751	93.090%	1855	24.6	43.24°C	0.973
	12.027V	5.061V	3.351V	4.993V	563.703				56.19°C	230.20V
8	43.378A	7.906A	7.883A	2.407A	600.078	92.677%	2545	33.8	43.84°C	0.976
	12.026V	5.060V	3.350V	4.986V	647.495				57.32°C	230.20V
9	49.238A	8.404A	8.364A	2.409A	674.601	92.241%	3120	39.3	44.58°C	0.979
	12.025V	5.058V	3.348V	4.983V	731.343				59.36°C	230.21V
10	55.099A	8.902A	8.875A	2.512A	749.728	91.707%	3684	43.9	45.63°C	0.981
	12.024V	5.057V	3.346V	4.978V	817.521				60.84°C	230.19V
11	61.362A	8.902A	8.881A	2.513A	824.964	91.157%	3885	44.8	46.61°C	0.982
	12.023V	5.056V	3.344V	4.975V	904.991				62.46°C	230.20V
CL1	0.142A	16.003A	15.999A	0.000A	136.570	87.009%	1631	21.1	42.78°C	0.911
	12.042V	5.066V	3.362V	5.032V	156.961				52.39°C	230.20V

CL2	62.513A	1.001A	1.001A	1.000A	765.011	92.171%	3537	42.4	45.91°C	0.981
	12.023V	5.059V	3.346V	5.003V	829.989				60.71°C	230.20V

The results above are not used in the certification process

Light Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.195A	0.492A	0.475A	0.198A	19.459	71.556%	0	<6.0	0.865
	12.025V	5.069V	3.361V	5.042V	27.194				115.04V
2	2.458A	0.985A	0.983A	0.397A	39.857	81.721%	0	<6.0	0.911
	12.026V	5.069V	3.360V	5.039V	48.772				115.05V
3	3.655A	1.479A	1.455A	0.596A	59.355	85.602%	0	<6.0	0.936
	12.030V	5.068V	3.360V	5.035V	69.338				115.04V
4	4.918A	1.973A	1.963A	0.795A	79.788	87.741%	0	<6.0	0.949
	12.036V	5.068V	3.360V	5.031V	90.936				115.05V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.198A	0.492A	0.476A	0.198A	19.503	72.559%	0	<6.0	0.580
	12.029V	5.069V	3.361V	5.042V	26.879				230.19V
2	2.461A	0.986A	0.980A	0.397A	39.896	82.830%	0	<6.0	0.729
	12.029V	5.069V	3.361V	5.038V	48.166				230.20V
3	3.657A	1.478A	1.457A	0.596A	59.386	86.658%	0	<6.0	0.805
	12.031V	5.069V	3.360V	5.035V	68.529				230.20V
4	4.919A	1.973A	1.962A	0.795A	79.806	88.907%	0	<6.0	0.844
	12.038V	5.068V	3.360V	5.031V	89.763				230.20V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.3 mV	11.3 mV	5.4 mV	7.0 mV	Pass
20% Load	11.4 mV	11.4 mV	6.3 mV	8.1 mV	Pass
30% Load	8.7 mV	13.4 mV	8.5 mV	8.9 mV	Pass
40% Load	11.5 mV	13.3 mV	8.4 mV	9.6 mV	Pass
50% Load	13.4 mV	15.5 mV	9.8 mV	10.5 mV	Pass
60% Load	15.5 mV	15.1 mV	10.9 mV	12.1 mV	Pass
70% Load	17.6 mV	17.1 mV	11.9 mV	14.4 mV	Pass
80% Load	20.5 mV	17.5 mV	13.5 mV	16.6 mV	Pass
90% Load	22.4 mV	17.9 mV	14.5 mV	18.8 mV	Pass
100% Load	29.5 mV	20.2 mV	16.7 mV	20.9 mV	Pass
110% Load	32.5 mV	21.3 mV	17.7 mV	23.3 mV	Pass
Crossload 1	17.3 mV	18.0 mV	15.5 mV	16.7 mV	Pass
Crossload 2	29.4 mV	18.5 mV	11.6 mV	21.6 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.9 mV	11.0 mV	5.4 mV	6.8 mV	Pass
20% Load	12.6 mV	11.5 mV	6.4 mV	8.1 mV	Pass
30% Load	9.4 mV	14.1 mV	8.4 mV	8.7 mV	Pass
40% Load	11.6 mV	13.2 mV	8.4 mV	9.4 mV	Pass
50% Load	13.5 mV	15.2 mV	9.6 mV	10.8 mV	Pass
60% Load	15.7 mV	15.3 mV	10.8 mV	12.6 mV	Pass
70% Load	18.1 mV	16.5 mV	12.0 mV	14.5 mV	Pass
80% Load	21.0 mV	18.5 mV	14.4 mV	16.6 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	23.1 mV	18.3 mV	14.7 mV	19.1 mV	Pass
100% Load	30.8 mV	19.2 mV	16.2 mV	20.9 mV	Pass
110% Load	33.9 mV	20.8 mV	16.9 mV	23.4 mV	Pass
Crossload 1	18.2 mV	19.3 mV	15.2 mV	16.8 mV	Pass
Crossload 2	30.4 mV	18.3 mV	11.7 mV	21.7 mV	Pass

The results above are not used in the certification process

Corsair SF750 Platinum



Top side



Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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